

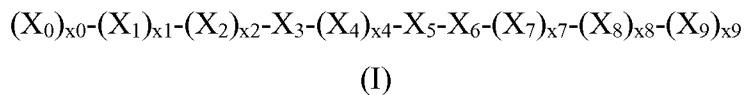
**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

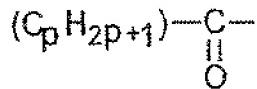
Claims 1-18 (canceled)

Claim 19 (currently amended): A molecule of general formula (I), and the pharmaceutically acceptable salts thereof:



in which

- x0, x1, x2, x4, x7, x8 and x9 each represent, independently, an integer equal to 0 or to 1;
- $X_0$  represents a group:



with p ranging from 3 to 23;

- $X_1$  and  $X_3$  each represent a natural or synthetic amino acid in the L or D configuration, each comprising at least one hydroxyl function on its side chain;
- $X_2$  represents a natural or synthetic amino acid in the L or D configuration chosen from those comprising an alkyl side chain;
- $X_4$  represents a natural or synthetic amino acid in the L or D configuration ~~which can be~~ chosen from those comprising an aromatic side chain;
- $X_5$  represents an amino acid in the L or D configuration chosen from lysine, arginine, histidine, aspartic acid, asparagine, glutamic acid and glutamine;
- $X_6$  represents an amino acid in the L or D configuration ~~which can be~~ chosen from tyrosine, phenylalanine, leucine, isoleucine, alanine, *para*-benzoylphenylalanine and lysine;
- $X_7$  represents an amino acid in the L or D configuration ~~which can be~~ chosen from glycine,

alanine, leucine, valine, asparagine and arginine;

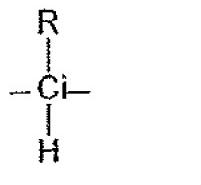
- $X_8$  represents an amino acid in the L or D configuration which can be chosen from proline, valine, isoleucine and aspartic acid;

- $X_9$  represents an amino acid in the L or D configuration which can be chosen from serine, alanine, lysine, arginine and tryptophan;

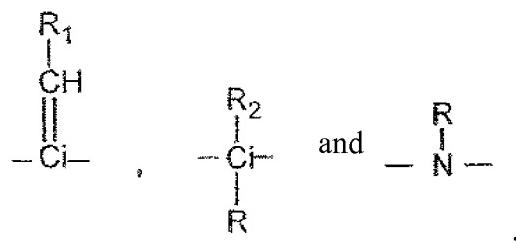
-the bond between two successive amino acids  $X_i-X_{i+1}$ , denoted  $q_{i \text{ to } i+1}$ ,  $i = 1 \text{ to } 8$  can be a peptide

$\begin{array}{c} \text{O} \\ \parallel \\ \text{bond} - \text{C} - \text{NH} - \text{or a pseudopeptide bond chosen from: CO-O, CO-S, CO-CH}_2, \\ \text{CO-N(Me), NH-CO, CH=CH, CH}_2\text{-CH}_2, \text{CH}_2\text{-S, CH}_2\text{-O, CS-NH, CH}_2\text{-NH,} \\ \text{CO-CH}_2\text{-NH, CO-NH-NH, CO-NH-N= and CO-N(NH}_2\text{);} \end{array}$

-the amino acids stated above  $X_i$ ,  $i = 1 \text{ to } 9$  being capable of comprising a modification of their  $\alpha$ -carbon, denoted  $C_i$ ,  $i = 1 \text{ to } 9$  and bearing the side chain R of the amino acid, which modification consisting of the replacement of:



with a group chosen from:



the groups R and  $\text{CH}-\text{R}_1$  representing the side chain of the amino acid and  $\text{R}_2$  representing a  $\text{C}_1\text{-C}_6$  alkyl group;  $\text{R}-\text{R}_2$  can constitute a ring,

-the pseudopeptides of the invention also corresponding to the following conditions:

$x_0$  is equal to 1

or

one of the bonds  $q_{i \text{ to } i+1}$ ,  $i = 1 \text{ to } 8$  is a pseudopeptide bond

or

one of the  $C_i$ ,  $i = 1 \text{ to } 9$  comprises one of the modifications stated above, wherein said

molecule of formula (I) is capable of modulating the proteasome.

Claim 20 (previously presented): The molecule as claimed in claim 19, wherein one or more of the following conditions is verified:

at least one of the integers  $x_0$ ,  $x_1$ ,  $x_2$ ,  $x_4$ ,  $x_7$ ,  $x_8$  and  $x_9$  is equal to 1;

$X_1$  and  $X_3$ , which may be identical or different, are chosen from threonine and serine;

$X_2$  is chosen from valine, leucine and isoleucine; or

$X_4$  is chosen from phenylalanine, tryptophan, tyrosine and *para*-benzoylphenylalanine.

Claim 21 (previously presented): The molecule as claimed in claim 20, comprising 4 to 8 amino acids.

Claim 22 (previously presented): A molecule as claimed in claims 19 to 21, wherein  $x_0 = 1$ .

Claim 23 (canceled)

Claim 24 (previously presented): The molecule as claimed in claim 19, wherein one or more of the following conditions are verified:

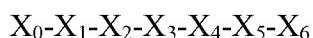
-at least one of  $X_1$  and of  $X_3$  represents threonine,

- $X_2$  is chosen from isoleucine and valine,

- $X_4$  is chosen from phenylalanine, tyrosine and *para*-benzoylphenylalanine, or

-at least 2 of the integers  $x_0$ ,  $x_1$ ,  $x_2$ ,  $x_4$ ,  $x_7$ ,  $x_8$  and  $x_9$  are equal to 1.

Claim 25 (previously presented): The molecule as claimed in claim 19, wherein the molecule corresponds to formula (Ia):



(Ia)

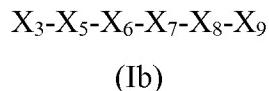
in which the bonds  $q_{i \text{ to } i+1}$  between the amino acids  $X_i$  and  $X_{i+1}$ ,  $i = 1$  to 5 are peptide or

pseudopeptide bonds.

Claim 26 (canceled)

Claim 27 (canceled)

Claim 28 (previously presented): The molecule as claimed in claim 19, wherein the molecule corresponds to formula (Ib):



in which:

- at least one of the bonds between two successive amino acids is a pseudopeptide bond,
- or
- one of the  $\alpha$ -carbons of one of the amino acids is a modified  $\alpha$ -carbon.

Claim 29 (currently amended): The molecule as claimed in claim 19, wherein the molecule is:

$\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVTYDY}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TISYDY}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVSYKF}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TITFDY}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TITYKF}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TITYEY}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TITYDF}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVTYKL}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVTYKY}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVTFKF}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TITYDL}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVTFDY}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;  
 $\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVTFKF}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;

$\text{CH}_3-(\text{C}_n\text{H}_{2n})-\text{CO-TVTYKF}$  with  $n=4, 6, 8, 10, 12, 14, 16, 18$ ;

TNL\*GPS;

SEK\*RVW;

TRA\*LVR;

SNL\*NDA; or

THI\*VIK;

~~Ava represents a  $\delta$ -aminovaleric acid group;~~

~~Bpa represents a *para*-benzoylphenylalanine group; and~~

wherein \* represents:

-a bond chosen from ester, thioester, keto methylene, keto methyleneamino, N-methylamide, inverse amide, Z/E vinylene, ethylene, methylenethio, methyleneoxy, thioamide, methyleneamino, hydrazino, carbonylhydrazone and N-amino bonds, or  
-the presence of an aza-amino acid as a substitution for one of the amino acids adjacent to \*.

Claim 30 (previously presented): The molecule as claimed in claim 19 coupled on its C-terminal end and/or on its N-terminal end with another molecule which promotes its bioavailability.

Claim 31 (previously presented): A composition comprising the molecule as claimed in claim 19 in a pharmaceutically acceptable carrier.

Claim 32 (currently amended): A method for ~~prevention and~~ treatment of a disorder or a pathology associated with proteasome activity comprising administering to an animal in need thereof a molecule as claimed in claim 19.

Claim 33 (currently amended): The method of as claimed in claim 32, wherein the disorder or pathology is selected from: cancers involving hematological tumors or solid tumors; autoimmune diseases; AIDS; inflammatory diseases; ~~cardiac pathologies; pathologies associated with the consequences of ischemic processes at the myocardial, cerebral or pulmonary level;~~ allograft rejection; and amyotrophy; ~~cerebral strokes; traumas; burns; and pathologies associated~~

~~with aging.~~

Claim 34 (previously presented): A method for radiosensitizing a tumor comprising contacting the tumor with a compound as claimed in claim 19.

Claim 35 (previously presented): A cosmetic and/or dermatological composition comprising a molecule as claimed in claim 19, in a cosmetically and/or dermatologically acceptable carrier.

Claim 36 (currently amended): A cosmetic process for preventing or treating the appearance of effects of chronological skin aging and/or of photoaging, comprising applying to skin the molecule as claimed in claim 19 in a cosmetically acceptable carrier.

Claim 37 (previously presented): The molecule as claimed in claim 21, wherein the molecule comprises 5 to 7 amino acids.

Claim 38 (previously presented): The molecule as claimed in claim 21, wherein the molecule comprises 6 amino acids.

Claim 39 (previously presented): The molecule as claimed in claim 24, wherein at least 3 of the integers  $x_0, x_1, x_2, x_4, x_7, x_8$  and  $x_9$  are equal to 1.

Claim 40 (currently amended): The molecule as claimed in claim 19 26, wherein p ranges from 2 to 6.

Claim 41 (currently amended): The molecule as claimed in claim 19 27, wherein p ranges from 5 to 19.

Claim 42 (previously presented): The method as claimed in claim 32, wherein the animal is a human.

Claim 43 (currently amended): The method as claimed in or claim 32 ~~33~~, wherein the ~~pathologies associated with aging are chosen from disorder is~~ Alzheimer's disease and Parkinson's disease.

Claim 44 (previously presented): A method for modulating the proteasome of a cell comprising administering the molecule of claim 19 to a cell.

Claim 45 (currently amended): The molecule as claimed in claim 19, wherein X<sub>1</sub> and X<sub>3</sub> both represent threonine.